

What is claimed is:

1. A portable wireless apparatus provided with a first reference electric potential and a second reference electric potential for transmitting at least one signal,
5 comprising:

a housing;

a frame disposed on the housing; and

an antenna device provided with central frequency
and return loss and electronically connected to
10 the frame, wherein the antenna device comprises
a first portion, a second portion connected to
the first portion for adjusting the central
frequency, a third portion connected to the
first portion, a fourth portion connected to
15 the first portion and the frame and the second
reference electric potential, and a fifth
portion connected to the third portion and the
first reference electric potential to provide
an adjustable distance between the fifth
20 portion and the fourth portion and adjusting
return loss.

2. The portable wireless apparatus as claimed in claim 1, wherein the antenna device is an inverse F-type antenna device.

25 3. The portable wireless apparatus as claimed in claim 2, wherein the antenna device is a cantilever element protruding from the frame.

1 4. The portable wireless apparatus as claimed in
2 claim 1 further comprising a plate disposed on the frame
3 and electrically connected to the antenna device.

1 5. The portable wireless apparatus as claimed in
2 claim 4, wherein the third portion is connected to the
3 plate and the second reference electric potential.

1 6. The portable wireless apparatus as claimed in
2 claim 1 further comprising a cable provided with a first
3 conductive portion connected to the fourth portion for
4 connecting the antenna device to the second reference
5 electric potential and a second conductive portion
6 electrically isolated from the first conductive portion
7 and connected to the fifth portion for connecting the
8 antenna device to the first reference electric potential.

1 7. The portable wireless apparatus as claimed in
2 claim 1 further comprising an adjustable device connected
3 to the antenna device, wherein the signal is transmitted
4 between the adjustable device and the antenna device.

1 8. The portable wireless apparatus as claimed in
2 claim 7, wherein the adjustable device has a modulator
3 and a demodulator connected to the antenna device.

1 9. The portable wireless apparatus as claimed in
2 claim 1, wherein the antenna device and the frame are
3 made of conductive material.

10. The portable wireless apparatus as claimed in claim 1 further comprising a display unit disposed on the housing through the frame.

10 11. A portable wireless apparatus provided with a first reference electric potential and a second reference electric potential for transmitting at least one signal, comprising:

a housing;

15 a frame disposed on the housing; and

a display unit disposed on the housing through the frame;

an antenna device for transmitting the signal and electrically connected to the frame, provided with a frequency-adjustable portion for adjusting the central frequency and a signal-transmission portion which transmits the signal and is connected to the first reference electric potential, and an antenna-grounded portion connected to the frame and the first reference electric potential to provide an adjustable distance between the signal-transmission portion and the antenna-grounded portion for adjusting return loss.

25 12. The portable wireless apparatus as claimed in claim 11, wherein the antenna device is an inverse F-type antenna device.

13. The portable wireless apparatus as claimed in claim 12, wherein the antenna device is a cantilever element protruding from the frame.

14. The portable wireless apparatus as claimed in claim 11 further comprising a plate disposed on the frame and electrically connected to the antenna device.

15. The portable wireless apparatus as claimed in claim 14, wherein the antenna-grounded portion is connected to the plate and the second reference electric potential.

16. The portable wireless apparatus as claimed in claim 11 further comprising a cable provided with a first conductive portion connected to the antenna-grounded portion for connecting the antenna device to the second reference electric potential and a second conductive portion electrically isolated from the first conductive portion and connected to the signal-transmission portion for connecting the antenna device to the first reference electric potential.

17. The portable wireless apparatus as claimed in claim 11 further comprising an adjustable device connected to the antenna device, wherein the signal is transmitted between the adjustable device and the antenna device.

18. The portable wireless apparatus as claimed in claim 17, wherein the adjustable device has a modulator and a demodulator connected to the antenna device.

60 19. The portable wireless apparatus as claimed in
claim 11, wherein the antenna device and the frame are
made of conductive material.

 20. The portable wireless apparatus as claimed in
claim 11, wherein the display unit is a liquid crystal
65 display.